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NOTES FOR CONTRIBUTORS

Members of the Society (and non-members) are asked to follow these simple instructions when writing articles or letters for submission to the *Bulletin*. The *Bulletin* is presented six times a year in a duplicated format: the paper size is 20.5×23 cm (10×8 inches), line drawings can be reproduced but the area should not be more than 17.5×23 cm. Lettering on figures should preferably be in 'Letraset', neatly done in Indian ink or left blank: if the last method is followed, the lettering should be indicated on an overlaying sheet and should *not* be done on the figure. Figures should be prepared on good quality white writing paper and not on Bristol Board or other thick material. Whenever plants or animals are mentioned the scientific name should also be given but not in parenthesis. Trinomials should not be used unless there is good reason to do so. Author's names of species are not required.

Contributions may be typed (preferably) or written clearly and should be sent to: M. P. Clifton, Box 44486, Nairobi, Kenya. Receipt of contributions will be acknowledged.

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A REPORT ON A VISIT TO KIBWEZI FOREST

In mid June I went to Kibwezi Forest, Kenya, with three friends from the Cave Exploration Group of East Africa for a short weekend study of the flora and fauna. Due to the rains the plants were just past their best, many of them having stopped flowering the week before. Though I was mainly interested in the insects of the area, I also collected a few fish and frogs together with a fresh-water crab.

The area is mostly made up of a dense scrub, of rather similar composition to that of the coral rag at the Coast. As we drove through all the windows of the vehicle were tightly closed due to Tsetse Flies, Glossina palidipes, one of the species which carry cattle diseases, but not sleeping sickness. These were very common in the forest. The road in is over lava ridges, some of them very steep and rough which jolt the car in all directions.

On the far side of the forest towards the Chyulu Hills there is an extensive swamp with deep holes in the lava which are full of water. The water is rather hard and appeared to be stopping the decomposition of the tree branches which are in it; almost like the fossilized trees round the lecture hall at the National Museum. Around these holes are high reeds and other vegetation, most of it growing on almost pure lava. Some silt has collected in small areas around these deep pools, allowing more robust trees such as the Yellow-barked Acacia, Acacia xanthophloea, and one or two large figs, Ficus sp. to grow to full size.

Between the main spring and the larger pools of water is a flat sandy-soiled area in which there are some almost circular shallow pools of water with an amazing amount of vegetation, including Water Lilies, Nymphaea sp (a white species with two blue flowers amongst them) and a species of Utricularia or Bladderwort. In this locality the birds seen were a Squacco Heron, Ardeola ralloides with a very buff back, and later a female Knob-billed Goose, Sarkidiornis melanota amongst the Water Lilies, and a pair of Egyptian Geese, Alopochen aegyptiaca on another pool. On leaving this area to go to the spring a small flock of Kenya Crested Guineafowl, Guttera pucherani were seen scurrying through the bush. It was decided to go back to this spit later to investigate its botanical side. Footprints in the mud at these pools showed movements of both Buffalo, Syncerus caffer, and a single Hyaena during the past two weeks. Unfortunately, the vehicle we were in developed gearbox trouble so we had to give the shallow ponds a miss.

Our camp-site was near a fast-flowing stream of clear water from which the Kibwezi water supply is taken. The area was ideal for insects of all kinds, as well as the aquatic animals associated with fast-flowing water. Strangely there were very few birds around the camp, only one Jacana, Actophilornis africana being seen on some still water near the site.

The National Museum has no records of any fish from these pools and swamps. Right next to the camp in some rocky water with the rocks covered with algae were a number of small fish feeding on the algae. To nibble off a piece, the fish turned on their sides and, gripping a strand of algae in their mouths, jerked upright, snapping it off close to the rock. Attempts to catch these fish were made and all failed until a net was placed at the bottom of the stream and the stones disturbed to make them come towards it. The net was then jerked up quickly when the fish were above it. Four were caught in this manner, and proved to be of a genus not previously in the Museum collection, Discognathus sp., probably hindii, but due to a lack of other material, and these specimens being young ones, positive identification will have to wait.

Two species of frogs were caught. One was the Tree Frog Hyperolius viridiflavus ferniquei, whitish with a brilliant red underside which was found on the reeds, and the other was Ptychadena superciliaris which was very common in all damp areas as well as a large group in a field. Also in the river under the stones were a large number of freshwater Crabs. One was collected for further study, and when it was placed in alchohol a number of tiny Crabs were found in the jar. Subsequent enquiries showed that the female carries the young for some time under her specially adapted tail.

Around the large pools the bird life included Pink-backed Pelican, Pelicanus rufescens, Darter, Anhinga rufa, Malachite Kingfisher, Alcedo cristata, Jacana, Black Crake, Limnocorax flavirostra and what appeared to be a Brown-hooded Kingfisher, Halcyon albiventris. Overhead a lone Crowned Hawk-Eagle was calling as he slowly circled and in the reeds were large numbers of probable Greater Swamp Warblers, Acrocephalus rufescens niloticus. One Marabou Stork, Leptoptilos crumeniferus was put up from the edge of one of the deep pools on which we launched a rubber boat and nearby, on some trees, were a group of Vultures. I was later told by the leader of the party and by our local guide that two weeks previously there had been many more birds in the area.

Near the camp-site many Butterflies were found, particularly on the damp patches of mud. One Mocker Swallowtail, Papilio dardanus was seen to land on the protruding water weed on one of the deep pools so that it could drink. Five other Swallowtails were seen: P. demodocus the Citrus Swallowtail, P. ophidacephalus the Emperor Swallowtail (very rare in Kenya, otherwise only known from the Coast and Meru), Papilio colona which is also coastal, P. nireus, the common Blue-banded Swallowtail and P. constantinus Constantine's Swallowtail which is also known from the Coast and, suprisingly enough, from the Kikuyu Escarpment. Many more Butterflies were seen, including the large Skipper Butterfly, Coeliades forestan, the Striped Policeman which was so common that you had to tread carefully at all the damp areas to avoid squashing them.

Unlike the Butterflies, the Moths were not very common and few came in to the lights. Three specimens of a tiny May-Fly were caught at the light. The most delightful sight was the many Humming-bird Hawk-Moths, Leucostrophus hirundo, a brown and grey moth with a white tail bar, hovering in front of the common pink Justitia-like flower in the more wooded parts.

Above the camp table, a shiny leaf on a tree attracted large numbers of Diopsid Flies. These are found in almost any damp area in Kenya, and look like small thin House Flies with their eyes on long stalks. We could find no apparent reason why a couple of hundred of them should gather on this one leaf in preference to the others on the tree. The congregation took place at dusk and the Flies could only be seen when silhouetted against the light. A random collection was made by placing part of the leaf in the killing jar. Preliminary investigation shows that most of them are males. A further case of communal gathering was seen; that of the Mother of Pearl Butterfly, Salamis parhassus, when towards dusk (about 6.15 p.m.) six were disturbed from below the same large leaf. It was noted that its near relative, S. anacardii, which was also common in the forest, seemed to roost singly. One of each of these Butterflies flew into light during the evening, but whether we disturbed them or they were actially flying around will have to await further study.

Finally, on launching the dinghy we found that over the deep water was a different type of Utricularia from that on the shallow pools, and it was mixed up with Ceratophilum submersum, a rare plant only previously known from Amboseli Lake. The Utricularia still awaits identification. In one of the smaller pools in which some trees had fallen were Terrapins which were about 25cm across the shells.

M.P. Clifton, P.O. Box 40658, NAIROBI.

FIGHTING IN MAMMALS

One point taught to most animal behaviour students and stressed in books on the subject is the way animals settle disputes without causing each other physical damage. Fights to the death are supposed to be detremental to species survival, and therefore fights become ritualized so that the victor can be determined without injury. It is interesting how often one sees evidence contrary to this.

In the Serengeti, Tanzania, with its high population of Thomson's Gazelle, Gazella thomsoni, one often sees males fighting. To film or photograph this is difficult as they seem rarely too involved to miss the arrival of a vehicle, stop fighting, and move off. Looking at them though, one often sees males with broken horns; some broken so short as to be useless for fighting or threat. I have found a freshly dead one with a wound in its side that could only reasonably have been caused by a horn. An autopsy showed the wound passed directly through the heart. I have also seen a dead Grant's Gazelle, Gazella granti, with a similar wound, though no autopsy was performed. Male Grant's Gazelles can be seen with broken horns, but this is more seldom than in Thomson's Gazelles. In addition I have observed Impala, Aepyceros melampus, Topi, Damaliscus korrigum, and Eland Taurotragus oryx with broken horns.

The only potentially lethal fight I have witnessed was between two male Fringe-eared Oryx, Oyyx beisa callotis. The cause of the fight was unknown; there were no females in the area. I was attracted to it by the sound of the clashing of horns and rising dust. In contrast to most antelope fights which consist mainly of straight ahead horn clashing, pushing and shoving, the two Oryx would meet head on and then manoruvre until they were standing at an acute angle to each other with their heads still in contact. They would then try to swing their heads and horn their opponent in the neck. The fight had apparently been going on for some time as both animals were wounded. During the few minutes we watched several more attempts were made, but no new wounds were inflicted. The force of the thrusts, though short, must have been considerable as one Oryx had a freely-bleeding wound 4 - 5cm in diameter in the nearly 2.5cm thick skin of his neck. As we watched they broke off fighting, maybe due to our presence, and a high speed chase through thick bush ensued but we were unable to follow.

A case of a fight to the death outside the antelope family occured in Tarangire National Park, Tanzania where I found a dead adult male Black Rhino, Diceros bicornis with a large wound behind his shoulder. Another male was seen in the

area with severe wounds in his shoulder and chest, though whether they were fatal is not known.

Jerry Rilling,
P.O. Box 284, ARUSHA,
Tanzania.

BASIC ECOLOGY

To return for two days to the classroom is to become envious of the modern schoolchild and at the same time sympathetic with his difficulties. What fun they do have - at least some of them ! This was brought home to us at a completely new kind of meeting of our Society, when two enthusiastic teachers of ecology set out to show us at the same time their idea of ecology and how they think it should be, and can be, taught. I shall not attempt to describe the details, but shall try to give some idea of the kind of experience it was.

The course was held in the junior biology laboratory at the Kenya High School, and a corner of the grounds near by. We were first given a copy of the 'Student's Book'. This is the book that many of us have seen advertised in the latest number of Africana (Begining Ecology by S. Moss & D. Theobald, Macmillan Education, 1976. Prices within East Africa: Student's Book Shs 5/-, Teacher's Book Shs 12/50). The course described normally takes a whole term, but as mature students we were taken through it at a gallop, and one at least was fairly worn out at the end.

In the study area our teachers had marked out a transect one metre wide and 20m long, in the long grass. At one end of the transect there was a tree, and at the other a small drainage ditch. In this strip, three plots 1m square had been marked out, one under the tree, one at the far end and one in the middle. We now saw why the number had to be restricted to 18. That made three groups of six. Each group took charge of the measurements and estimates of one of the metre squares, and in a party of six there is something for everyone to do. One can take measurements at ground level, one above the vegetation and one in the middle. One can call out readings and one can write them down. Our teachers had picked out for us six dominant grasses, four herbacious plants, one shrub and of course there was the tree. But we were told not to bother with their names. We had to learn their characteristics, as we had later to estimate the proportion of each in our plots. Mr Moss and Mr Thoebald believe that names are not necessary at this stage, and the effort to learn them is a distraction. The plants were referred to as grass

(or herb) no. 1, no. 2 etc. It was the same with the invertebrate inhabitants. In such a small plot vertebrates could hardly be expected, but invertebrates were there in abundance, and again no names were used except for large groups, butterflies, ants etc. The student must observe not memorise, but it must be controlled and methodical observation. At each stage the pupil is encouraged to make guesses or 'hypotheses' about what he would expect to find, and to test these 'hypotheses' by observation. Between each session on the transect we returned to the laboratory, tabulated our results, and made diagrams with coloured pencils and discussed our findings.

At least one member of the class was astonished by the difference revealed by really crude and simple means between areas so small, so close together and at first glance so similar. For crude and simple most of our instruments were. A matter that takes a high priority in the mind of any teacher is that of apparatus. Any demand for expensive equipment is likely to be coldly received. The most expensive piece of apparatus that we used was a thermometre, and of these each group had three. With these we made what might be called the only accurate measurements. For the rest, small pieces of light-sensitive or moisture-sensitive paper, and even little flags tied with thread to rulers produced results that made one feel that an invertebrate inhabitant travelling from one end of the transect to the other would experience a 'change of air' such as one of us might feel on a visit to the Coast. Of course the whole interest in this kind of measurement or estimate is in the comparison. Each by itself is useless. Each six works as a team. They must agree among themselves in estimating for example, the height of the tree or when the paper has faded to the right colour. Thus the wilder guesses of the various members might be expected to cancel each other out. But by the end of the course the whole class, as the authors say in the introduction to the workbook, 'will have completed a piece of original biological research', and will know more about scientific method than if they had learnt many pages out of a textbook.

Mr Moss and Mr Thoebald, encouraged we hope by the response to this course, have offered to arrange another, and should they do so, members are advised to put their names down at once. But we must not accept such an offer lightly. The authors describe it as 'a heavily structured course'. By which they mean that they have taken an immense amount of trouble both over the original programme and over adapting it to such a group as our Society was likely to produce. We owe them indeed a very great many thanks.

'Corvinella'

LION KILLING CHEETAH

On 16th September 1976, tourists on a game drive in the Tarangire National Park, Tanzania with Park Ranger Benito Merere saw and followed a lone Cheetah, Acinonyx jubatus in the area near Lamprey's Camp. The Cheetah was heading towards the river; when it reached the high bank it leapt and there was a cloud of dust. When the car arrived at the scene, the dust was settling and a male Lion, Panthera leo left to return to a female he was mating. She was about 30m away. The Cheetah was dead, presumably from deep puncture wounds, though no close examination was made. Later the same afternoon the Cheetah carcass was almost completely eaten by Vultures.

Jerry Rilling,
P.O. Box 284, ARUSHA,
Tanzania.

LIFE'S NOT ALL SUNSHINE FOR THE DUNG BEETLE

Scarab Beetles feed on dung, and one of the largest of the Scarabs feeds on the dung of the Elephant. The Beetle in question, Heliocopris dilloni, is in fact the main Elephant-dung disposal system in Tsavo National Park, Kenya, and that was what side-tracked ecologists T.J. Kingston and Malcolm Coe into the study of its highly evolved life cycle (Journal of Zoology, Vol 181, p. 243).

The main problem the Dung Beetle has to contend with is the climate, which is hot and dry except during the two rainy seasons which occur unreliably in March/April and November/December. Breeding, which is confined to these capricious rainy seasons, begins with the female's digging a deep tunnel under a heap of Elephant dung which she then proceeds to drag into a breeding chamber she has built at the end of the tunnel.

This burrowing - up to 120 centimetres - is the first of a series of vital adaptations to environmental vicissitudes. While the temperature at the ground surface may fluctuate from 20° to a desiccating 55° C, lower than 50cm down it remains at a comfortable moist 28° C.

Having constructed her breeding chamber, the female scarab proceeds to fashion the Elephant dung into cup shapes into which she deposits her eggs. Once the egg is laid in the dung cup, the female covers it up to make an almost perfect spherical ball onto which she slaps extra dollops of dung, leaving a

breathing space at one end.

The developing larvae are then left entombed underground (the soil at the end of the rainy season becoming rock-hard and quite impenetrable) for six months - or more if they are unlucky with their rainy seasons. During this 23-week sojourn, they eat their way through their dung sarcophagus, rotating as they do so to preserve a spherical inner surface, and depositing plates of faeces which dry into an intricate ventilation system.

The release of the adults comes with the rain - it takes 100 centimetres of rain to soften the soil sufficiently for emergence - and for the building of the next batch of breeding chambers.

Extracted from New Scientist 31 March 1977, p. 774. Ed.

A NOTE ON CROTON EATERS AROUND NAIROBI

For several years now the Croton trees (mainly Croton megalocarpus) have been completely defoliated by a blackish caterpillar with light lines down the sides which is of the 'looper' type.

Quite a number of people believe that this is the Army Worm, Spodoptera exempta, but that only feeds on members of the Grass family, Graminae. The species which feeds on Croton is Amyna punctum. This has no common name that I know of, and is a small brown moth with triangular forewings which often have a white dot in the centre. When at rest the moth sits with the hind edge of its forewings touching over its body, so that the whole moth looks triangular.

Coupled with this is a very odd occurance noted on the last 'Dudu Crawl' on 24th April this year. Out on the black-cotton pans by Embakasi Station, several members of the party noticed that at about five minute intervals solitary Green-veined Charaxes Butterflies, Charaxes candiope were flying past. At the time I was at a loss to account for this as the butterfly is usually found in forest. The foodplant of the caterpillar of this species is Croton (four species being recorded by van Someren). I therefore think that these butterflies were searching for Croton trees on which to lay their eggs.

The devastation of Croton trees appears to stretch as far as Limuru and includes Muguga, Langata, Karen, Karura, Ngong and the Nairobi National Park.

Reference : V.G.L. van Someren, Journal of the Lepidopterist's Society Vol 28, 1974 p 315 - 331.

M.P. Clifton,
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Box 40658, NAIROBI.

THE DAY IT RAINED FISH

An unusual phenomenon has been reported by people of Pokor Keben location in Baringo after a non-stop down pour. Area Chief Mr Kandagor was informed by elders that the rain had brought with it a lot of fish.

Chief Kandagor was told that a hilly area was littered with fish. The startled Chief visited the location and collected a few fish which he deposited with the Eldarma Ravine District Officer, Mr A.K. Githinji.

Mr Githinji also confirmed that the hilly area had no pond or rivers from which the red and black fish might have come. KNA.

The above article, which appeared in the Daily Nation on Monday 9th May 1977 p. 5 was sent to the Editor by Mr A.P. Nield Box 40426 Nairobi who comments below :

Does any member have a theory as to how this might have occured, and what species of fish it was ? Having read Charles Fort's 'Book of the Damned' someone might have a less obvious theory !

The Day it Rained Fish - A Reply to Mr A.P. Nield

I have been unable to lay hands on a copy of the book 'Book of the Damned', and have a feeling that I might have missed out on a more intriguing explanation than I can offer myself !

The fish that immediately springs to mind are the coloured cyprinodonts (or 'killfish') of the genus Nothobranchius, which are by way of being specialists in 'spontaneous generation'. They live in temporary pans and waterholes and the eggs, which are buried in mud, withstand long periods of complete dessication in between rainy seasons. Nothobranchius species, however, occur only along the Coast, and the lowland plains (notably the Kano Plains) bordering Lake Victoria, and are so far completely unknown from the Rift Valley drainage.

The answer probably lies in the well known habit of small Barbus of travelling up every small stream and rivulet during floods. This seems to be a sort of innate dispersal mechanism which results, for instance, in small Barbus occasionally turning up after prolonged heavy rain in new dams and quarries miles away from permanent water. There must, inevitably, be a large mortality of those which are caught out when the rain stops. The most likely candidate is probably Barbus gregorii Günther which occurs in Lake Baringo, and the juveniles of which occur in the shallow waters of the lake and in large concentrations in small streams running off the Kamasia Range. One would not, however, describe them as red and black, although their fins are a faint reddish brown and they have the usual dark dorsal counter shading of most silvery fish.

I refuse to consider seriously the possibility of transportation of Lake Baringo fish through the heavens by means of a giant water spout !

Alex MacKay,
Herpatologist,
Box 40658, NAIROBI.

DOWN AT DIANI - OCTOBER 1976

On a visit to the Diani area on the Kenya coast, we were reading John William's Field Guide to the Birds of East and Central Africa, and noted that the Morning Warbler, Cichladusa arquata and the Red-necked Falcon, Falco chicquera, occur in the vacinity of Borassus Palms, Borassus aethiopium, amongst others. Within easy walking distance of where we were staying were four of these magnificent Palms, none nearer to each other than three hundred metres. We decided to inspect them with their relationships in mind.

To our delight no Morning Warblers were encountered anywhere else but in the immediate vacinity of each Palm. One also had a pair of Red-necked Falcons with three fully fledged young, seen on 15th to 17th October. Two others had evidence of small raptor-type nests not in use. Local Africans assured us that one of those was occupied in 1975 by a bird of the Falcon type, though the local Wadigo we asked were not sure of the distinction between this bird and the Lizard Buzzard, Kaupifalco monogrammicus which was very abundant locally.

The Red-billed Shrike, Prionops retzii is described by Mackworth-Praed and Grant as 'highly gregarious and even while nesting, three or four birds may be round the nest together,

though as yet there is no evidence that they share the duties as in Prionops'. *

Just two hundred metres from the beach, we were fortunate to find a nest containing three immature birds being attended by a flock of five adults. Having watched this nest at intervals for about two weeks, from 5th - 18th October, we could confirm that feeding duties at any rate are occasionally shared. On two occasions, three birds fed in quick succession. Even more convincing was it when four birds delivered food rapidly, one after another.

The flock as a whole was quite fearless and allowed very close approach. Our scaffolding was only four metres from the nest and no hide was used. The aerial acrobatics in persuit of prey, the careful preparation of the food, and the gentleness of its presentation were fascinating to watch, as was the care with which almost every feacal sack was dealt with (by injestion usually, but also by disposal at a distance), even to the retrieval, in mid-air, of a dropped sack. Their repertoire of calls and bill snapping also helped to make it a very rewarding bird to observe.

That the Spotted Ground Thrush, Turdus fischeri is not 'now extinct' has happily been commented upon in this Bulletin recently. We were priviledged to see this bird at close quarters on no less than three occasions, on 10th, 11th and 13th October in the southernmost end of the Diani Forest just West of the tourist road, and within 75m of the base of a tall tree occupied by the resident Crowned Hawk Eagle, Stephanoaetus coronatus. Here also on the 10th October, in the same binocular field of view, was seen an African Pitta, Pitta angolensis.

The Red-tailed Ant Thrush, Neocossyphus rufus is said to be 'rare and little-known'. Perhaps good fortune will allow someone to alter this, if it has not already been done. Three clear sightings on 10th October by ourselves in this same area certainly give it a high priority for our next holiday down at Diani.

Dr and Mrs G.C. Irvine,
Chogoria Hospital,
P.O. CHOGORIA, via Meru,
Kenya.

* The Red-billed Shrike was at one time in the genus Sigmodus but has now been changed to Prionops. Ed.

HINTS ON COLLECTING ROAD KILLS

Many birds, large and small, become casualties in many ways, some are killed on the road by speeding motorists, others fly into windows and a few, on a misty night, may be attracted to lighted windows and fly into them and are killed or maimed. Quail are frequently found in the City of Nairobi and most of the specimens of the colourful Pitta in the National Museum, Nairobi collection were birds found below well lit windows. Nightjars, Coursers and Thicknees which feed on the road are dazzled by car headlights and become victims.

Some of such specimens need not be wasted and if you have a chance (in the traffic) to stop and pick them up, more often than not the National Museum, Nairobi can make use of them. If crushed, of course, they are virtually useless but early morning casualties are often good enough to make into mounted exhibits or study skins. When not too good for this purpose, the skull and bones can be turned into skeletal material for the Department of Osteology. The bones and skull are of considerable importance in the study of phylogeny and we have often been able to determine the food of Owls by comparing the bones in the Owl pellets with the collection material, so few birds need to be wasted.

We are asked, 'What should we do with birds or mammals found dead on the road or below lighted windows'?

1. The simplest method is to pick up the specimen and bring it along to the Bird Room at the back of the main part of the National Museum.
2. If you cannot bring in the specimen quickly then first note the colour of its iris and jot this down, then pop the specimen into a polythene bag, express all the air as you roll the specimen into it, seal and place in the coldest section of the fridge or deep freeze. In the cold section of the fridge birds will keep well for a couple of weeks, but in the deep freeze maybe for months.
3. Not everybody has either alchohol or methylated spirits in the house or a hypodermic syringe and needle, but if you have both items and are unable to get the specimen into the fridge quickly then the specimen might be saved if injected with the alchohol. Inject into the brain, crop, chest cavity and abdomen and be reasonably generous with the fluid. The alchohol will act partly as a preservative and prevent rapid bacterial decay.
4. Skeletal material. If all else fails the specimen can be used as skeleton material and can be simply sun dried. Tie a string to the neck, to each wing and each leg then hang the

specimen in a tree somewhere in the garden where it will be out of reach of cats and dogs. Flies and their maggots will soon clear it as it slowly dries out. This can then be handed over to the Bird Room where it can be finally prepared as clean skeletal material.

5. Mammals are not quite so easy to deal with but again they can be placed in the deep freeze, rolled in newspaper and in a polythene bag well sealed and the air exhausted.

6. With a mammal, if there is any delay, then they should be treated like the bird with generous injections of alchohol. However, if it is possible there is more chance of saving the specimen if the stomach and other organs can be removed, and this is a fairly simple operation. Make an incision from between the legs right up to the chest then remove the intestines, spleen, liver, kidneys, lungs and heart. Apply a very liberal quantity of salt (coarse salt is preferred) which should be well distributed within the chest cavity and belly. A specimen so treated will last a couple of days but will last better if it can be placed in the fridge or deep freeze.

7. Most important however, is to have some data concerning the specimen and this should consist of a note giving the iris colour, place where found and the date together with the collectors name and address.

8. Many valuable specimens are to be obtained from amongst road casualties and this saves delinerate collection.

Finally may I mention that there are four Provincial Museums in Kenya, Meru, Kitale, Kisumu and Fort Jesus at Mombasa which will all require specimens for public exhibit. Road casualties help to make these specimens available. Also the University, Education Department, Schools and even the Department of Wildlife Conservation and Management require specimens for teaching purposes.

G.R. Cunningham van-Someren,
Dept. of Ornithology,
Box 40658, NAIROBI.

RECORDS SECTION

The following plants are new distribution records from the Rift Valley for A.D.Q. Agnew's Upland Kenya Wild Flowers.

Rorippa cryptantha (A. Rich.) Robyns & Boutique Cruciferae
J. Hayes 144 Oct. 1976

Glinus lotoides L. var denudatus Aizoaceae. J. Hayes 160 Oct. 1976

Phytolacca octandra L. Phytolaccacaea. J. Hayes 8 May 1976

Cyathula uncinulata (Schrad.) Schinz. Amaranthaceae. J. Hayes 10 May 1976

Geranium arabicum Forsk spp arabicum Geraniaceae. J. Hayes 220 May 1977

Oxalis corniculata L. Oxalidaceae. J. Hayes 167 Nov. 1976

Kosteletzkya begoniifolia (Ulbr.) Ulbr. Malvaceae. J. Hayes 176 Dec. 1976

Abutilon braunii Bak. f. Malvaceae. J. Hayes 6 May 1976
Note: Not recorded in Upland Kenya Wild Flowers

Microglossa pyrifolia (Lam.) O. Ktze (Conyza pyrifolia Lam.) Compositae. J. Hayes 162 Nov. 1976

Conyza hypoleuca A. Rich. Compositae. J. Hayes 5 May 1976

Conyza tigrensis Oliv. & Hiern Compositae. J. Hayes 199 April 1977

Helichrysum foetidum (L.) Moench. Compositae. J. Hayes 194 April 1977

Aspilia mossambicensis (Oliv.) Wild Compositae. J. Hayes 60 Aug. 1976

Cotula anthemoides L. Compositae. J. Hayes 218 May 1977

Cineraria grandiflora Vatke. Compositae. J. Hayes 177 Dec. 1976

Senecio vulgaris L. Compositae. J. Hayes 192 April 1977

Hypochoeris glabra L. Compositae. J. Hayes 189 April 1977

Solanum mauense Bitter Solanaceae. J. Hayes 186 March 1977

Alectra sessiliflora (Vahl) Kuntze Scrophulariaceae. J. Hayes 143 Oct. 1976

Plectranthus sp G of UKWF Labiatae. J. Hayes 113 Sept. 1976

Eulophia paivaeana (Reichb. f.) Summerh. ssp. borealis Summerh.
Orchidaceae. J. Hayes 185 March 1977

LIBRARY NOTICE

'He for subscribers baits his hook
And takes your cash - but where's the book ?'

Well, we still have plenty left in the Library unlike the gentleman of whom Charles Churchill was writing in the 18th Century; but it is a fact that a few have taken wings. We ask anyone who has knowledge of the whereabouts of the following to inform the Librarian:

Aurivillius, Rhopalocera Aethiopica 1898
Cole, Leakey's Luck

In order to safeguard valuable and irreplaceable books we request readers - as does any Library of similar nature - to leave handbags, briefcases and various carry-alls at the Library reception desk.

Inconvenient ? Sometimes, and we regret that this rule is necessary; but it is inconvenience versus erosion. The slow insidious erosion of the assets of our Library - books which have been collected over many, many years and are a tribute to the energy, enthusiasm and generosity of Society members and Librarians, past and present. It is a valuable collection and one we can be proud of. We wish to keep it intact.

We hope soon to add more room to the Library thus making books easier to get at and making more space for those who wish to study. In the meantime, the books have been re-arranged and are ready for the move. To those people who complain that it is like going to a supermarket which has re-shelved its commodities 'I put out my hand for biscuits and found a pork chop' we say, please ask the Librarian for the book you want. She knows where it is and is there to help.

Finally, all members and asked please to bring their membership cards when using the Library and taking out books. This will help the Library staff, and ensure that only members get the use of the Library.

Jean Hayes,
Hon. Librarian

BOOK NOTICE

'Check List of the Birds of the World'
By E.S. Gruson, Collins, London 1976. Price £3.95

Further to my note in the last issue of the Bulletin I have, through the kindness of Mr C.W. Benson of the Department of Zoology, Cambridge received a copy of this important Check List.

The Volume is already 'dated'. While it includes reference to R.B. Paynes work on the Indigo Birds (1973), it omits Payne and Risley's work on the Ardeiidae (1976). Similarly the revision by Irwin and Clancey, 1974 and many other recent papers are omited.

There are a number of errors on the spelling of generic names and to us, here in Kenya, some very odd common English names have been applied to our birds. Nevertheless the system follows Peter's Check List with no or little difference, but here I would like to draw attention to Miss P. Allen's letter and Mr G.C. Backhurst's comments in the last two Bulletins.

Gruson writes, 'For the convenience of the non-professional user it was decided to list the sequence of species within genera alphabetically. There is at least some interlectual support for this somewhat unusual treatment. Moreau (1960) in his review of the Ploceiidae concludes 'what is this order of genera really worth ? Being unable to indicate evolutionary radiation, a linear order cannot reflect any conception of the phylogeny of the group: it obscures the fact that the biological gaps between the genera are an extremely unequal extent. In other words, an attempt at a logical or phylogenetic order is hopelessly prejudiced. I prefer the alternative of an arbitary, alphabetical order; and that is what will be offered in the summary'. These are brave words, almost revolutionary words. What concerned Moreau about the sequence of genera is at least equally valid about the sequence of species. Myre (1965), the Nestor of systematics, has written a rebuttal to Moreau's despair. He presents cogent arguments for the necessity of placing species into natural groups and goes on to say that this does not permit the interlectually lazy solution of an alphabetical suquence.... yet this brings it at once into immediate conflict with one of the functions of classification, ease of reference '. Gruson continues ' since the vast majority of the users of this book will not be involved in, or perhaps even aware of the problems of taxonomy, the list is arranged to maximise the 'ease of reference'.

G.R. Cunningham van-Someren

REQUEST FOR INFORMATION

Marabou Storks, Leptoptilos crumeniferus

I should be most grateful for any records of large flocks of Marabous (say over 100) that have been seen anywhere in Eastern Africa (Eritrea to Botswana), during the past few years. Approximate numbers, locality and what they were doing, would be helpful.

It would also be a great help to have data on approximate numbers through the year anywhere that this has been recorded.

Anyone who has such records is asked to send them within the next few weeks to -

Dr D.E. Pomeroy, Department of Zoology, Kenyatta University College, P.O. Box 43844, NAIROBI.

SOCIETY NOTES

Office Sincere apologies go to any member who has been to the Society office in the last few weeks and found it closed. Due to family circumstances the Secretary/Treasurer has been unable to be in attendance, and the Assistant Secretary/Treasurer is away on home leave. It is hoped that the office will again be open on most days during July. In the absence of the Secretary, information about the Society, reprints etc. can be obtained through the Editor, Mr M.P. Clifton in the Entomology Department at the National Museum.

Articles for the Bulletin This issue has used up all the material for the Bulletin. I am sure many of you have interesting observations which would be of interest to our members, so do write in with any information you have on any subject of natural history.

Common Families of Flowering Plants of Kenya This illustrated guide to the families of Plants by Mr S. Moss is being reprinted by the Society and should be available shortly. The booklet covers 31 pages and gives a beginer valuable information on how to tell the difference between families. Please contact the Secretary/Treasurer. Cost: around Shs. 5/-.

Library Members are requested to read the Library notice on Page 90 of this issue. Three new books have arrived recently. Miss C. Moss has given up a copy of her 'Portraits in the Wild' which will be reviewed in the next Bulletin.

Also in the next Bulletin there will be a review of Dr Leuthold's 'African Ungulates, A Comparative Review of their Ethology and Behavioral Ecology' which he has given to the Society. A copy of the three volume work on the Flowering Plants of the Anglo Egyptian Sudan by Andrews has just been purchased by the Society and will be placed in the Library shortly.

Functions Mrs Campbell is always grateful for suggestions from you about the type of trips and lectures you would like to have. Why not offer to arrange a trip or lecture for her ? Please drop her a line, at the Society's address.

NEW MEMBERS

The following members have been elected:

Local Full Members

Mrs James C. Armstrong, P.O. Box 30598, NAIROBI
Ms Illa Bhatt, P.O. Box 10488, NAIROBI
Mrs D. von Burkersroda, P.O. Box 30744, NAIROBI
Dr Eugene G. Bozniak, c/o T.A.M.S., P.O. Box 30447, NAIROBI
Mr J.R. Downer, P.O. Box 32068, NAIROBI
Mrs Alison Evans, P.O. Box 154, NYERI, Kenya
Dr M.B. Gillett, Ngora Hospital, P.O. Box 5, NGORA, Uganda
Mr R.M. Glen, P.O. Box 40691, NAIROBI
Ms J. Lane Hanan, P.O. Box 30367, NAIROBI
Mr W.L. Hutton, P.O. Box 30670, NAIROBI
Mr Mwangi Kangethe, P.O. Box 27, ATHI RIVER, Kenya
Mr Patrick Mangan, P.O. Box 135, NAIVASHA, Kenya
Mrs C. Phillips, c/o U.N.E.P., P.O. Box 30552, NAIROBI
Mr Steven C. Rothe, Sawagongo High School, P.O. YALA, Kenya
Dr Larry T. Schwab, P.O. Box 1366, NAKURU, Kenya
Scott and Barbara Wallace, Institute for Development Studies, P.O. Box 30197, NAIROBI

Local Junior Members

Nikolaus von Burkersroda, P.O. Box 30744, NAIROBI

REMEMBER TO TELL YOUR FRIENDS THAT THEY CAN JOIN THE SOCIETY FOR SHS. 35/- AS FROM 1st JULY 1977 AND RECEIVE PUBLICATIONS FROM THAT DATE.

SOCIETY FUNCTIONS

For July excursion please see the previous Bulletin.

Monday 11th July 1977 at 5.30 p.m. at the National Museum Hall, Nairobi: Mr R.D. Haller, Agronomist at Bamburi Portland Cement Co. Ltd will give an illustrated lecture on 'Rehabilitation of a Limestone Quarry'.

Monday 8th August 1977 at 5.30 p.m. at the National Museum Hall, Nairobi: Mr B.S. Meadows of the Ministry of Water Development will give a lecture on 'Water Pollution'.

Sunday 14th August 1977 Field trip to 'Green Park', Naivasha, by kind invitation of the Manager. Birds, Botany, Insects, and general natural history subjects will be studied in the open bushland. Please meet at 10 a.m. sharp at the junction of the North Lake Road on the main Nairobi/Nakuru road between Naivasha and Gilgil towns. Bring a picnic lunch and be prepared for some walking.

Saturday 27th August 1977 Afternoon Botany Walk in the Langata area of Nairobi. Leader, Mrs Fleur Ng'weno. Please meet in front of the National Museum at 3.00 p.m.

Monday 12th September 1977 at 5.30 p.m. at the National Museum Hall: Mr J. Kahurananga of the E.A. Herbarium will give an illustrated lecture on 'The Ecology of large Herbivores in the Simanjiro Plains, Northern Tanzania'.

Weekend 17th/18th September 1977 Botanical Field trip to Ol Donyo Orok, Namanga. Leader: Mr J.B. Gillett. Members should be prepared for camping with full equipment. Plant collecting will take place on the actual mountain. Members wishing to take part in this camp should please fill in the enclosed slip and return it, with a stamped addressed envelope, to Mrs A.L. Campbell, P.O. Box 14469, NAIROBI, before 30th August 1977.

Monday 10th October 1977 at 5.30 p.m. at the National Museum Hall, Nairobi: Dr Norman Myers will give an illustrated lecture on 'Spotted Cats'.

Weekend 22nd/23rd October 1977 Week-end field trip by kind invitation of Mr and Mrs Webb, Nanyuki. Details later.

THE EAST AFRICA NATURAL HISTORY SOCIETY

Chairman: J. S. Karmali
Vice Chairman: Dr J. Kokwaro
Editor, Jl E. Africa nat. Hist. Soc. Nat. Mus.: Mrs J. Hayes
Secretary/Treasurer: Miss D. Angwin
Librarian: Mrs J. Hayes
Ass. Secretary/Treasurer: Mrs D. M. Collins
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Joint Library Sub Committee (Society representatives): Mrs J. Hayes, Dr J. O. Kokwaro.

MEMBERSHIP

This offers you free entry to the National Museum, Nairobi; free lectures, films, slide shows or discussions every month in Nairobi; field trips and camps led by experienced guides; free use of the Joint Society-National Museum Library (postal borrowing is also possible); reciprocal arrangements with the Uganda Society's Library in the Uganda Museum, Kampala; family participation: wives and children of members may attend most Society functions; one copy of the *EANHS Bulletin* every two months; a copy of each *Journal* published during your period of membership; the Society controls the ringing of birds in East Africa and welcomes new ringers and runs an active Nest Record Scheme; activities such as plant mapping and game counting are undertaken on a group basis. Membership rates are given at the foot of this page.

JOURNAL

The Society publishes *The Journal of the East Africa Natural History Society and National Museum.* Each issue consists usually of one paper, however, sometimes two or more short papers may be combined to form one number. The aim of this method of presentation is to ensure prompt publication of scientific information; a title page is issued at the end of each year so that the year's papers may be bound together. Contributions, which should be typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, Box 44486, Nairobi, Kenya. Authors receive twenty-five reprints of their article free, provided that these are ordered at the time the proofs are returned.

E.A.N.H.S. BULLETIN

This is a duplicated magazine issued six times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (*EANHS Bulletin*), Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs cannot be published.

SCOPUS

The Ornithological Sub Committee publishes this quarterly bird magazine. Cost: EANHS members KShs. 50/- p.a., non-EANHS members KShs. 75/- p.a. All correspondence to D. A. Turner, Box 48019, Nairobi, Kenya.

MEMBERSHIP SUBSCRIPTION RATES

Life	One payment: Kshs. 750/-
Institutional (schools, libraries) .	annual payment: Kshs. 50/-
Full	annual payment: Kshs. 50/-
Junior (full-time student, no *Journal* supplied) . . .	annual payment: Kshs. 10/-

Subscriptions are due 1st January. From 1st July you may join for Kshs. 35/- and receive publications from that date. Application forms for membership are obtainable from the Secretary, Box 44486, Nairobi.

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